

# CLASSIFICATION OF ROCKS

## I. IGNEOUS ROCKS

INTRUSIVE (felsic → mafic)	EXTRUSIVE (felsic → mafic)	ULTRAMAFIC (rocks with very little silica)
• GRANITE	• RHYOLITE	• PERIDOTITE (olivine rich)
• DIORITE	• ANDESITE	• PYROXENITE (pyroxene rich)
• GABBRO	• BASALT	• ANORTHOSITE (plagioclase feldspar rich)

## II. SEDIMENTARY ROCKS: CLASTIC

SEDIMENT PARTICLE	DESCRIPTION	ROCK NAME
Gravel	<b>Rounded</b> rock fragments.	CONGLOMERATE
Gravel	<b>Angular</b> rock fragments.	BRECCIA
Sand	<b>Quartz</b> predominant, visible grains, often thickly bedded, depositional structures such as cross-bedding common.	SANDSTONE
Sand	Sandstone with more than 25% <b>feldspar</b> grains.	ARKOSE
Silt	Quartz predominant, grains barely visible, <b>gritty feel</b> .	SILTSTONE
Clay	<b>Thick beds</b> >1cm blocky, fine mud, no particles discernable, may show polygonal cracks, composed predominantly of clay minerals and very fine quartz.	MUDSTONE
Clay	<b>Laminated</b> mudstone, fissile, splits into thin sheets.	SHALE

### CHEMICAL

TEXTURE	COMPOSITION	ROCK NAME
Clastic	<b>Calcite</b> fragments and calcite cement. White or grey or blueish in colour. Fizzes strongly with dilute HCl.	LIMESTONE
Clastic	Rounded calcite <b>ooliths</b> and calcite cement. Can be dolomitized.	OOLITIC LIMESTONE
Clastic	Calcite fragments and calcite cement with significant alteration to the magnesium bearing carbonate dolomite. Fizzes with dilute HCl.	DOLOMITIC LIMESTONE
Clastic	Carbonate almost completely transformed to <b>dolomite</b> . Often yellowish or pinkish in colour. Fizzes weakly with dilute HCl.	DOLOMITE or DOLOSTONE
Crystalline	<b>Halite</b> , interlocking cubic crystals.	ROCK SALT
Crystalline	Halite with <b>sylvite</b> , interlocking cubic crystals, sometimes contains orange-to-red carnallite crystals.	POTASH
Crystalline	<b>Gypsum</b> , commonly interlocking prismatic or fibrous crystals. Usually white or light grey.	ROCK GYPSUM

### ORGANIC

TEXTURE	COMPOSITION	ROCK NAME
Clastic	Clastic shell fragments.	COQUINA (limestone)
Clastic	Microscopic shells of coccoliths	CHALK
Altered	Microscopic siliceous organisms, recrystallized silica.	CHERT
Clastic	Consolidated plant remains.	COAL

## III. METAMORPHIC ROCKS

ROCK NAME	TYPE	PARENT ROCK	CHARACTERISTICS
SLATE	foliated	shales and muds	prominant splitting surfaces
SCHIST	foliated	fine grained rocks	mica minerals, often crinkled or wavy
GNEISS	foliated	coarse grained rocks	dark and light bands or layers of aligned minerals
QUARTZITE	non-foliated	sandstone	interlocking almost fused quartz grains, little or no porosity
MARBLE	non-foliated	limestone	interlocking, often coarse, calcite crystals, little or no porosity